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Naled (CASRN 300-76-5)

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Reference Dose for Chronic Oral Exposure (RfD)



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Naled; CASRN 300-76-5

Human health assessment information on a chemical substance is included in the IRIS database only after a comprehensive review of toxicity data, as outlined in the [IRIS assessment development process](#). Sections I (Health Hazard Assessments for Noncarcinogenic Effects) and II (Carcinogenicity Assessment for Lifetime Exposure) present the conclusions that were reached during the assessment development process. Supporting information and explanations of the methods used to derive the values given in IRIS are provided in the [guidance documents located on the IRIS website](#).

STATUS OF DATA FOR Naled

File First On-Line 03/31/1987

Category (section)	Status	Last Revised
Oral RfD Assessment (I.A.)	on-line	01/01/1995
Inhalation RfC Assessment (I.B.)	no data	
Carcinogenicity Assessment (II.)	no data	

I. Chronic Health Hazard Assessments for Noncarcinogenic Effects

I.A. Reference Dose for Chronic Oral Exposure (RfD)

Substance Name — Naled
CASRN — 300-76-5
Last Revised — 01/01/1995

The oral Reference Dose (RfD) is based on the assumption that thresholds exist for certain toxic effects such as cellular necrosis. It is expressed in units of mg/kg-day. In general, the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Please refer to the Background Document for an elaboration of these concepts. RfDs can also be derived for the noncarcinogenic health effects of substances that are also carcinogens. Therefore, it is essential to refer to other sources of information concerning the carcinogenicity of this substance. If the U.S. EPA has evaluated this substance for potential human carcinogenicity, a summary of that evaluation will be contained in Section II of this file.

NOTE: The Oral RfD for naled may change in the near future pending the outcome of a further review now being conducted by the RfD/RfC Work Group.

I.A.1. Oral RfD Summary

Critical Effect	Experimental Doses*	UF	MF	RfD
		100	1	2E-3

Brain ChE inhibition

NOEL: 0.2 mg/kg/day

mg/kg/day

2-Year Rat Study,
Dietary

LEL: 2.0 mg/kg/day

Chevron Chemical Co.,
1984a

*Conversion Factors: none

__I.A.2. Principal and Supporting Studies (Oral RfD)

Chevron Chemical Company. 1984a. MRID No. 00128701, 00141784, 40418901. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Sprague-Dawley CD rats were randomly assigned to four groups (55 animals/ sex/group). The animals were fed (by gavage) diets containing 0, 0.2, 2, and 10 mg/kg/day for 2 years. Brain cholinesterase was inhibited approximately 24 and 60% in both male and female rats receiving dose levels of 2 and 10 mg/kg/day, respectively. Also there was a slight inhibition of red blood cell cholinesterase and moderate inhibition of plasma cholinesterase at 10 mg/kg/day.

__I.A.3. Uncertainty and Modifying Factors (Oral RfD)

UF — An uncertainty factor of 100 was used to account for the fact that a brain ChE NOEL was used in determining the RfD. This factor accounts for both the expected inter- and intraspecies variability to the toxicity of this chemical in lieu of specific data.

MF — None

__I.A.4. Additional Studies/Comments (Oral RfD)

Data Considered for Establishing the RfD:

- 1) 2-Year Feeding/Oncogenic - Rat: Principal study - see previous description; core grade minimum
- 2) 1-Year Feeding - Dog: NOEL=0.2 mg/kg/day; LEL=2.0 mg/kg/day (inhibition of plasma and RBC ChE, decreased hemoglobin and hematocriti); core grade minimum (Chevron Chemical, 1986)
- 3) 2-Generation Reproduction - Rat: Parental NOEL=6 mg/kg/day; Parental LEL=18 mg/kg/day (decreased body weight in males); Progeny NOEL=6 mg/kg/day; Progeny LEL=18 mg/kg/day (decreased survival, litter size and pup body weight); core grade minimum (Chevron Chemical, 1985)
- 4) Teratology - Rat: Maternal NOEL=10 mg/kg/day; Maternal LEL=40 mg/kg/day (body weight loss, tremors, dyspnea, and depressed activity); Teratogenic NOEL=40 mg/kg/day (HDT); Fetotoxic NOEL=40 mg/kg/day (HDT) (Chevron Chemical, 1984b)
- 5) Teratology - Rabbit: Maternal NOEL=8 mg/kg/day (HDT); Fetotoxic NOEL=8 mg/kg/day (HDT); core grade supplementary (Chevron Chemical, 1984c)

Other Data Reviewed:

- 1) 89-Week Feeding (oncogenic) - Mice: Systemic NOEL=15 mg/kg/day; Systemic LEL=50-75 mg/kg/day (increased mortality, decreased body weight in males, decreased relative liver weight in females); core grade minimum (Chevron Chemical, 1984d)

Data Gap(s): Rabbit Teratology Study

__I.A.5. Confidence in the Oral RfD

Study — Medium
Database — Medium
RfD — Medium

The critical study is of fair quality and is given a medium rating. The data base has some gaps, but there is a good amount of chronic data in dogs and rodents; therefore, confidence in the database can be considered medium to high. Confidence in the RfD can also be considered medium to high.

__I.A.6. EPA Documentation and Review of the Oral RfD

Pesticide Registration Standard, December 1982

Pesticide Registration Files

Agency Work Group Review — 07/22/1986, 04/15/1987, 12/09/1994

Verification Date — 07/22/1986

Screening-Level Literature Review Findings — A screening-level review conducted by an EPA contractor of the more recent toxicology literature pertinent to the RfD for Naled conducted in November 2001 did not identify any critical new studies. IRIS users who know of important new studies may provide that information to the IRIS Hotline at hotline.iris@epa.gov or (202)566-1676.

__I.A.7. EPA Contacts (Oral RfD)

Please contact the IRIS Hotline for all questions concerning this assessment or IRIS, in general, at (202)566-1676 (phone), (202)566-1749 (FAX) or hotline.iris@epa.gov (internet address).

__I.B. Reference Concentration for Chronic Inhalation Exposure (RfC)

Substance Name — Naled
CASRN — 300-76-5

Not available at this time.

__II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Naled
CASRN — 300-76-5

This substance/agent has not undergone a complete evaluation and determination under US EPA's IRIS program for evidence of human carcinogenic potential.

__III. [reserved]

__IV. [reserved]

__V. [reserved]

__VI. Bibliography

Substance Name — Naled
CASRN — 300-76-5
Last Revised — 03/01/1991

__VI.A. Oral RfD References

Chevron Chemical Company. 1984a. MRID No. 00128701, 00141784, 40418901. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Chevron Chemical Company. 1984b. MRID No. 00138682, 00144026. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Chevron Chemical Company. 1984c. MRID No. 00146496. Available from EPA. Write to FOI, EPA, Washington, DC

20460.

Chevron Chemical Company. 1984d. MRID No. 00141785, 00148569. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Chevron Chemical Company. 1985. MRID No. 00146498. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Chevron Chemical Company. 1986. MRID No. 00160751. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

_VI.B. Inhalation RfC References

None

_VI.C. Carcinogenicity Assessment References

None

_VII. Revision History

Substance Name — Naled
CASRN — 300-76-5

Date	Section	Description
09/30/1987	I.A.4.	Study description added (number 2.)
09/30/1987	IV.	Pesticide Registration Standard added
06/01/1989	I.A.6.	Work group review date added
03/01/1991	I.A.4.	Citations added
03/01/1991	VI.	Bibliography on-line
01/01/1992	IV.	Regulatory actions updated
01/01/1995	I.A.	Oral RfD noted as pending change
01/01/1995	I.A.6.	Work group review date added
08/01/1995	I.A., I.A.6.	EPA's RfD/RfC and CRAVE workgroups were discontinued in May, 1995. Chemical substance reviews that were not completed by September 1995 were taken out of IRIS review. The IRIS Pilot Program replaced the workgroup functions beginning in September, 1995.
04/01/1997	III., IV., V.	Drinking Water Health Advisories, EPA Regulatory Actions, and Supplementary Data were removed from IRIS on or before April 1997. IRIS users were directed to the appropriate EPA Program Offices for this information.
12/03/2002	I.A.6.	Screening-Level Literature Review Findings message has been added.

_VIII. Synonyms

Substance Name — Naled
CASRN — 300-76-5
Last Revised — 03/31/1987

- 300-76-5
- Alvora
- Bromchlophos
- Bromex
- Bromex 50
- BRP

- Dibrom
- Dibromfos
- 1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate
- Dimethyl(1,2-dibromo-2,2-dichloroethyl)phosphate
- ENT 24988
- Fosbrom
- Naled
- Phosphoric acid, 1,2-dibromo-2,2-dichloroethyl dimethyl ester
- RE 4355

IRIS Home

Chronic Health Hazards for Non-Carcinogenic Effects

Reference Dose for Chronic Oral Exposure (RfD)

- Oral RfD Summary
- Principal and Supporting Studies
- Uncertainty and Modifying Factors
- Additional Studies/Comments
- Confidence in the Oral RfD
- EPA Documentation and Review

Reference Concentration for Chronic Inhalation Exposure (RfC)

- Inhalation RfC Summary
- Principal and Supporting Studies
- Uncertainty and Modifying Factors
- Additional Studies/Comments
- Confidence in the Inhalation RfC
- EPA Documentation and Review

Carcinogenicity Assessment for Lifetime Exposure

Evidence for Human Carcinogenicity

- Weight-of-Evidence Characterization
- Human Carcinogenicity Data
- Animal Carcinogenicity Data
- Supporting Data for Carcinogenicity

Quantitative Estimate of Carcinogenic Risk from Oral Exposure

- Summary of Risk Estimates
- Dose-Response

Data
• Additional Comments
• Discussion of Confidence
Quantitative Estimate of Carcinogenic Risk from Inhalation Exposure
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